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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: : Bryan Jeffery Moles
Serial No. : 10/034,394
Filed : December 27, 2001
For : ALTERNATE INTERPRETATION OF MARKUP
LANGUAGE DOCUMENTS
Group No. : 2174
Examiner : Ryan F. Pitaro

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
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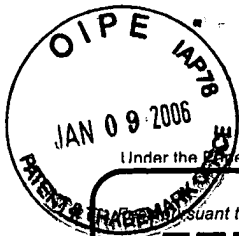
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For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 500.00

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- 20 or HP =	x	=				
HP = highest number of total claims paid for, if greater than 20						
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)			
- 3 or HP =	x	=				
HP = highest number of independent claims paid for, if greater than 3						

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

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Fees Paid (\$)

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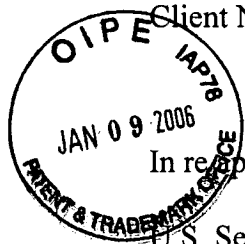
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PATENT

Client No. (SAMS01-00175)

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U.S. Serial No.: 10/034,394

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Examiner: Ryan F. Pitaro

MAIL STOP APPEAL BRIEF - PATENTS

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APPEAL BRIEF

Sir:

Applicants herewith respectfully submit that the Examiner's decision of July 26, 2005, finally rejecting Claims 1-21 in the present application, should be reversed, in view of the following arguments and authorities. This Brief is submitted on behalf of Appellant for the application identified above. A check is enclosed for the fee for filing a Brief on Appeal. Please charge any additional necessary fees to Deposit Account No. 50-0208.

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APPENDIX A - Claims Appendix

APPENDIX B - Copy of Formal Drawings

APPENDIX C - Copy of Patent Application 10/034,394 As Originally Filed

APPENDIX D - Evidence Appendix. There is no additional evidence in this appendix.

APPENDIX E - Related Proceedings Appendix - There are no related proceedings.

TABLE OF AUTHORITIES

<i>ACS Hospital Systems v. Montefiore Hospital</i> , 220 U.S.P.Q. 929 (Fed. Cir. 1984).	5
<i>Graham v. John Deere Co.</i> , 383 U.S. 1, 148 U.S.P.Q. 459 (1966).	5
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<i>Uniroyal, Inc. v. Rudkin-Wiley Corp.</i> , 5 U.S.P.Q.2d 1434 (Fed.Cir. 1988).	5

Real Party in Interest

The real party in interest, and assignee of this case, is Samsung Electronics Co., Ltd.

Related Appeals or Interferences

To the best knowledge and belief of the undersigned attorney, there are none.

Status of Claims

Claims 1-21 are under final rejection, and are each appealed. The claims as currently written are included in the Claims Appendix (Appendix A).

Status of Amendments after Final

No amendments to the claims were entered after final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The following summary refers to disclosed embodiments and their advantages, but does not delimit any of the claimed inventions.

In General

The present application is directed, in general, to a system in which a portion of a markup language document (200) is scanned for tags associated with graphical elements (202a, 202b). Each detected graphical element is replaced with a placeholder (207a, 207b), having a label corresponding to a button (110), where actuation of the button initiates display of the associated graphical element. These placeholders may be reused (207a) to replace other graphical elements within other portions of the document, when such other portions are selected for display. *Abstract; page 10, line 11 - page 13, line 16; Figure 1; and Figures 2A - 2E.*

In general operations, a wireless communications device (100) includes a processor or controller (101) communicably coupled to a memory (102), a wireless transceiver (103) and a display

(104). In addition to a basic input/output system (BIOS) (105), the memory contains, within application level programs (106), a browser (107) having access to a markup language conversion controller (108). The memory also includes a data storage area (109) within which retrieved, and optionally translated, markup language documents are stored. The wireless communications device retrieves markup language documents from external or peripheral sources. Either during the retrieval and (temporary) storage of the documents in the data storage area - or during rendering of retrieved markup language documents for display - the conversion controller modifies the markup language document for display, using the placeholder scheme described above. *Page 8, line 11 - page 9, line 16; and Figure 1.*

Support for Independent Claims

Note that, per 37 CFR §41.37, only each of the independent claims are discussed in this section. In the arguments below, however, the dependent claims are also discussed and distinguished from the prior art. The discussion of the claims is for illustrative purposes, and is not intended to effect the scope of the claims.

Independent Claim 1

Independent Claim 1 describes a converter - for use in a browser - that automatically adapts markup language documents for display in small areas (*e.g.*, display (104) of wireless device (100)). *Page 8, line 11 - page 9, line 16; and Figure 1.*

The converter comprises a conversion controller (*e.g.*, controller (108)) that scans a portion of markup language source (*e.g.*, document (200)) - that is selected to display - for tags associated with graphical elements (*e.g.*, graphic images (202a-202b), buttons (204) and (206), fields (203), or boxes (205)). *Page 8, line 11 - page 9, line 16; page 10, line 11 - page 11, line 12; page 12, line 17 - page 13, line 5; Figure 1 and Figure 2A.*

The conversion controller automatically replaces each detected graphical element within the selected markup language source portion with one of a plurality of placeholders (*e.g.*, placeholders

(207a-207b)) that have labels corresponding to a set of buttons (*e.g.*, buttons (110)). *Page 8, line 11 - page 9, line 16; page 11, lines 4 - 23; Figure 1 and Figures 2A - 2B.*

The plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source, when such other portions are selected for display. *Page 12, lines 10 -16; and Figure 2C.*

Independent Claim 8

Independent Claim 8 describes a communications device (*e.g.*, wireless device (100)) comprising a display (*e.g.*, display (104)); an input for receiving a markup language document (*e.g.*, document (200)) to be displayed on the display; and a conversion controller (*e.g.*, controller (108)). *Page 8, line 11 - page 9, line 16; Figure 1 and Figure 2A.*

The conversion controller scans a selected display portion of source for the markup language document for tags associated with graphical elements (*e.g.*, graphic images (202a-202b), buttons (204) and (206), fields (203), or boxes (205)). *Page 8, line 11 - page 9, line 16; page 10, line 11 - page 11, line 12; page 12, line 17 - page 13, line 5; Figure 1 and Figure 2A.*

The conversion controller automatically replaces each detected graphical element within the selected markup language source portion with one of a plurality of placeholders (*e.g.*, placeholders (207a-207b)) having labels corresponding to a set of buttons (*e.g.*, buttons (110)). *Page 8, line 11 - page 9, line 16; page 11, lines 4 - 23; Figure 1 and Figures 2A - 2B.*

The plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source, when such other portions are selected for display. *Page 12, lines 10 -16; and Figure 2C.*

Independent Claim 15

Independent Claim 15 describes a method of adapting markup language documents for display in small areas (*e.g.*, display (104) of wireless device (100)). *Page 8, line 11 - page 9, line 16; and Figure 1.*

This method comprises scanning a portion of markup language source selected for display (*e.g.*, document (200)) for tags associated with graphical elements (*e.g.*, graphic images (202a-202b),

buttons (204) and (206), fields (203), or boxes (205)). *Page 8, line 11 - page 9, line 16; page 10, line 11 - page 11, line 12; page 12, line 17 - page 13, line 5; Figure 1 and Figure 2A.*

Each detected graphical element within the selected markup language source portion is automatically replaced with one of a plurality of placeholders (e.g., placeholders (207a-207b)) having labels corresponding to a set of buttons (e.g., buttons (110)). *Page 8, line 11 - page 9, line 16; page 11, lines 4 - 23; Figure 1 and Figures 2A - 2B.*

The plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display. *Page 12, lines 10 -16; and Figure 2C.*

Grounds of Rejection to be Reviewed on Appeal

1. Are Claims 1-21 obvious over Timothy Bickmore et al., *Web Page Filtering and Re-Authoring for Mobile Users*, 42 COMPUTER J. 534 (1999) ("Bickmore") in view of U.S. Patent No. 6,489,976 to Patil et al., ("Patil")?

ARGUMENT

Stated Grounds of Rejection

The rejections outstanding against the Claims are as follows:

In Section 4 of the July 26, 2005 Office Action, Claims 1-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Timothy Bickmore, et al., *Web Page Filtering and Re-Authoring for Mobile Users*, 42 COMPUTER J. 534 (1999) ("*Bickmore*") in view of U.S. Patent No. 6,489,976 to Patil et al., ("*Patil*").

Legal Standards

The legal standards for an obviousness¹ rejection are referenced in the footnotes below.

¹The Supreme Court has explained how to apply §103:

Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

Graham v. John Deere Co., 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

Obviousness cannot be inferred from a combination of references without a showing that one of ordinary skill would have been motivated to combine those references:

When prior art references require selective combination ... to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself.... Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination.

Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q.2d 1434, 1438 (Fed.Cir. 1988), *quoting Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543 (Fed.Cir. 1985), and *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick*, 221 U.S.P.Q. 481 (Fed.Cir. 1984).

Where an obviousness rejection is based on a combination of references, the Examiner must show that one of ordinary skill would have been motivated to combine those references.

See In re Nilssen, 7 USPQ2d 1500 (Fed.Cir. 1988); *Panduit Corp. v. Dennison Mfg. Co.*, 1 USPQ2d 1593, 1597 (Fed.Cir. 1987); *ACS Hospital Systems v. Montefiore Hospital*, 220 USPQ 929 (Fed.Cir. 1984).

While [a reference] may be capable of being modified to run the way [the applicant's] apparatus is claimed, there must be a suggestion or motivation
(continued...)

Analysis of Examiner's Rejection

The cited references are each briefly discussed in relevant part, and then the rejection of each claim is addressed separately under each ground of rejection.

Bickmore is drawn to a system for displaying Web pages on devices with limited communications bandwidth and small displays. Bickmore discloses a mobile device that displays a portion of markup language containing graphical elements by replacing those graphical elements with placeholders. As such, Bickmore does have some functional similarities to the present application. However, Bickmore does not include several claimed elements and functions, as described in detail below, and does not provide suggestion or motivation to prompt the creation or addition of those elements or functions.

Patil is drawn to a system for displaying pop-up accelerator key symbols when a user holds down a command button (such as ALT) on a computer keyboard. While Patil shares some functional similarities with the present application, it does not include several claimed elements and functions, as described in detail below.

¹(...continued)

in the reference to do so. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.").

In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed.Cir. 1990).

Ground of Rejection 1: Claims 1-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Timothy Bickmore, et al., *Web Page Filtering and Re-Authoring for Mobile Users*, 42 COMPUTER J. 534 (1999) ("*Bickmore*") in view of U.S. Patent No. 6,489,976 to Patil et al., ("*Patil*").

These claims are allowable over this combination of references, as discussed below.

Claim 1

Claim 1 requires, among other limitations, a "conversion controller for ... automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons" and that "the plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source."

The cited references do not appear to teach or suggest - either alone or in combination - a conversion controller that automatically replaces each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons and reuse of the plurality of placeholders to replace detected graphical elements within other portions of the markup language source.

Bickmore describes a system for displaying Web pages on devices with limited communications bandwidth and small displays (*Col. 4, line 60 - Col. 5, line 2*). When the Bickmore system encounters an image in a Web page, it replaces that image with a reduced-size version of the image. This reduced version image serves as a hyperlink to the full-size image (*Col. 11, lines 23-26*).

Applicants respectfully submit that - while such "thumbnail" in-page hyperlinks may indeed be placeholders - they are not the same as or equivalent to placeholders having labels corresponding to a set of buttons.

The Examiner has conceded this point in Section 4 of the July 26, 2005 Office Action.

In an attempt to compensate for this deficiency, the Examiner contends that Patil “teaches having labels corresponding to a set of buttons (Column 4 lines 36-40), wherein the plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display (Column 5 lines 21-31).”

Applicants respectfully traverse the Examiner’s suggested interpretation of Patil.

Applicants find that Patil generally discloses a system that displays pop-up accelerator key symbols when a user holds down a command button (such as ALT) on a computer keyboard. The pop-up symbols are displayed adjacent to the toolbar icons to which accelerator keys are mapped, so that the user may determine which key to press in order to activate a desired icon.

Patil discloses a primary level of pop-up symbols (100₁ - 100₃; 101₁ - 101₄) that are respectively associated with a primary level of options (*e.g.*, icons) (110₁ - 110₃; 111₁ - 111₄) that appear on a computer display (*Col. 3, line 57 - Col. 4, line 10; Figure 1*). These pop-up symbols are displayed on the screen, with the icons, simultaneously (*Col. 4, lines 4-7; Figure 1*).

When a user depresses a first key on a keyboard (*e.g.*, the “ALT” key), the pop-up symbols appear on the screen next to - not in place of - the icons with which they are associated (*Col. 4, lines 11-16; Figure 1*).

Applicants respectfully submit that Patil’s primary pop-up symbols are not placeholders, as required by claim 1.

The primary pop-up symbol for each icon provides the user with an indication of a key - the “accelerator” key - which, when depressed together with the first key (*i.e.*, two keys required to actuate), enable the user to implement the primary option depicted by that icon, instead of utilizing the icon itself (*Col. 4, lines 7-25; Figure 1*).

Applicants respectfully submit that Patil’s primary pop-up symbols are not “placeholders having labels corresponding to a set of buttons” as required by claim 1. At best, Patil’s primary pop-up symbols are supplemental display elements - appearing together with, not in place of, the graphical element (*e.g.*, icon) with which they are associated - that provide a user with an indication of a multi-key keystroke that may be utilized as an alternative actuating the graphical element itself

(e.g., “clicking” the icon).

Patil further discloses a secondary level of pop-up symbols (121₁ and 121₂) that respectively correspond to sub-options (121₁ and 121₂) of a primary option (111₁) (*Col. 4, lines 31-35; Figure 1*).

These secondary level pop-up symbols (121₁ and 121₂) are displayed on the screen, in addition to and simultaneous with the primary level pop-up symbols and the icons (*Col. 4, lines 36-40; Figure 1*). Their appearance may be concurrent with the display of the primary level of pop-up symbols (*i.e.*, when a user depresses the first key on a keyboard, causing the primary pop-up symbols to appear on the screen), or may first require the user to first select the primary option (111₁) with which they are associated (*Col. 4, lines 36-40; Figure 1*).

Applicants respectfully submit that Patil’s secondary pop-up symbols are not placeholders, as required by claim 1.

Applicants respectfully submit that Patil’s secondary pop-up symbols are not “placeholders having labels corresponding to a set of buttons” as required by claim 1. At best, Patil’s secondary pop-up symbols are supplemental display elements - appearing together with, not in place of, the graphical element (*e.g.*, icon) with which they are associated. They provide a user with an indication of a multi-key keystroke that may be utilized as an alternative actuating the graphical element itself (*e.g.*, “clicking” the icon).

Thus, both Bickmore and Patil fail to disclose the required elements of claim 1.

Nonetheless, the Examiner contends that it would have been obvious to an artisan at the time of the invention to combine the method of Bickmore with the teaching of Patil. In support of this conclusion, the Examiner contends that motivation “to do so would have been to provide a convenient way of initiating a link besides the conventional point and click method.”

Applicants respectfully traverse the Examiner’s contentions.

Applicants submit that neither Bickmore nor Patil teach or suggest the highly selective and speculative combination that the Examiner seeks to defend.

Applicants respectfully submit that - in order to selectively combine the Bickmore and Patil

references as the Examiner has suggested - one of ordinary skill in the art would have to: 1) read Bickmore and learn Bickmore's system for replacing full-size images with reduced-size thumbnail versions; 2) speculatively assume a deficiency in Bickmore's thumbnail hyperlink system; 3) disregard a significant portion of Bickmore's teaching to speculatively assume that Bickmore's system needed a convenient way of initiating a link besides the conventional point and click method of the image; 4) seek out and find Patil; 5) read Patil and learn of Patil's system for displaying pop-up symbols next to an icon when a user holds down a command button on a computer keyboard; 6) selectively cull from Patil only the concept of pop-up symbols, disregarding the remainder of Patil's structures and methods in the process; 7) substantially modify Patil's pop-up symbols, from elements that appear with an item with which they are associated, to elements that appear in place of an item with which they are associated; 8) substantially modify the already modified Patil pop-up symbols, from providing text indicating a series of keystrokes, to text corresponding to a button; and 9) substantially modify the structure and operation of the Bickmore system to successfully replace its thumbnail hyperlinks with the substantially modified Patil pop-up symbols.

Applicants respectfully submit that there is no suggestion or motivation in either Bickmore or Patil to cause one of ordinary skill in the art to undertake such a highly speculative and selective process. Furthermore, even if one of ordinary skill did undertake such a process, there is no reasonable expectation that the effort would be successful - much less provide all of the required elements of claim 1. As explained above, neither Bickmore nor Patil disclose all the required elements of claim 1.

Applicants respectfully request allowance of claim 1 and reversal of the Examiner's rejections.

Claim 2

Claim 2 depends from claim 1, so the arguments above with respect to claim 1 apply here, and these arguments are incorporated herein by reference.

Claim 2 further requires "wherein each button is a physical switch or display element

functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder.”

The Examiner admits in the July 26, 2005 that Bickmore fails to disclose this.

In order to overcome this deficiency, the Examiner attempts to refer to Patil’s discussion of base application module 30 (*Col. 6, lines 17-25*) as the claimed elements. However, nothing in Patil, or any other cited art, teaches or suggests that this element functions as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 2 and reversal of the Examiner’s rejections.

Claim 3

Claim 3 depends from claim 1, so the arguments above with respect to claim 1 apply here, and these arguments are incorporated herein by reference.

Claim 3 further requires “wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and animations.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 3 and reversal of the Examiner’s rejections.

Claim 4

Claim 4 depends from claim 1, so the arguments above with respect to claim 1 apply here, and these arguments are incorporated herein by reference.

Claim 4 further requires “wherein the conversion controller, responsive to selection of the markup language source portion for display, automatically replaces a tag associated with each detected graphical element with a link to one of the placeholders.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 4 and reversal of the Examiner’s rejections.

Claim 5

Claim 5 depends from claim 4, so the arguments above with respect to claims 1 and 4 apply here, and these arguments are incorporated herein by reference.

Claim 5 further requires “wherein the conversion controller, responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replaces a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 5 and reversal of the Examiner’s rejections.

Claim 6

Claim 6 depends from claim 4, so the arguments above with respect to claims 1 and 4 apply here, and these arguments are incorporated herein by reference.

Claim 6 further requires “wherein the conversion controller passes altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and

display.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 6 and reversal of the Examiner’s rejections.

Claim 7

Claim 7 depends from claim 6, so the arguments above with respect to claims 1, 4 and 6 apply here, and these arguments are incorporated herein by reference.

Claim 7 further requires “wherein actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source initiates display of the graphical element replaced by the corresponding placeholder.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 7 and reversal of the Examiner’s rejections.

Claim 8

The Examiner has rejected claim 8 under the same rationale as the rejection of claim 1.

Thus, the arguments above with respect to claim 1 apply here, and these arguments are incorporated herein by reference

Furthermore, claim 8 requires, among other limitations, “a conversion controller scanning a selected display portion of source for the markup language document for tags associated with graphical elements and automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding

to a set of buttons.”

This element requires a controller that both scans a portion of source for tags and automatically replaces each detected graphical element with one of the plurality of placeholders. Nothing in Bickmore or Patil, or any combination of them, appears to teach this element as described with relation to all other elements of this claim.

Applicants respectfully request allowance of claim 8 and reversal of the Examiner’s rejections.

Claim 9

Claim 9 depends from claim 8, so the arguments above with respect to claim 8 apply here, and these arguments are incorporated herein by reference.

Claim 9 further requires “wherein each button is a physical switch or display element functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder.”

The Examiner admits in the July 26, 2005 that Bickmore fails to disclose this.

In order to overcome this deficiency, the Examiner attempts to refer to Patil’s discussion of base application module 30 (*Col. 6, lines 17-25*) as the claimed elements. However, nothing in Patil, or any other cited art, teaches or suggests that this element functions as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 9 and reversal of the Examiner’s rejections.

Claim 10

Claim 10 depends from claim 8, so the arguments above with respect to claim 8 apply here, and these arguments are incorporated herein by reference.

Claim 10 further requires “wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and animations.”

Applicants respectfully traverse the Examiner's contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 10 and reversal of the Examiner's rejections.

Claim 11

Claim 11 depends from claim 8, so the arguments above with respect to claim 8 apply here, and these arguments are incorporated herein by reference.

Claim 11 further requires "wherein the conversion controller, responsive to selection of the markup language source portion for display, automatically replaces a tag associated with each detected graphical element with a link to one of the placeholders."

Applicants respectfully traverse the Examiner's contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 11 and reversal of the Examiner's rejections.

Claim 12

Claim 12 depends from claim 11, so the arguments above with respect to claims 8 and 11 apply here, and these arguments are incorporated herein by reference.

Claim 12 further requires "wherein the conversion controller, responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replaces a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements."

Applicants respectfully traverse the Examiner's contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 12 and reversal of the Examiner's rejections.

Claim 13

Claim 13 depends from claim 11, so the arguments above with respect to claims 8 and 11 apply here, and these arguments are incorporated herein by reference.

Claim 6 further requires "wherein the conversion controller passes altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and display."

Applicants respectfully traverse the Examiner's contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 13 and reversal of the Examiner's rejections.

Claim 14

Claim 14 depends from claim 13, so the arguments above with respect to claims 8, 11 and 13 apply here, and these arguments are incorporated herein by reference.

Claim 14 further requires "wherein actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source initiates display of the graphical element replaced by the corresponding placeholder."

Applicants respectfully traverse the Examiner's contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements

as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 14 and reversal of the Examiner's rejections.

Claim 15

The Examiner has rejected claim 15 under the same rationale as the rejection of claim 1.

Thus, the arguments above with respect to claim 1 apply here, and these arguments are incorporated herein by reference

Applicants respectfully request allowance of claim 15 and reversal of the Examiner's rejections.

Claim 16

Claim 16 depends from claim 15, so the arguments above with respect to claim 15 apply here, and these arguments are incorporated herein by reference.

Claim 16 further requires "wherein each button is a physical switch or display element functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder."

The Examiner admits in the July 26, 2005 that Bickmore fails to disclose this.

In order to overcome this deficiency, the Examiner attempts to refer to Patil's discussion of base application module 30 (*Col. 6, lines 17-25*) as the claimed elements. However, nothing in Patil, or any other cited art, teaches or suggests that this element functions as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 16 and reversal of the Examiner's rejections.

Claim 17

Claim 17 depends from claim 15, so the arguments above with respect to claim 15 apply here,

and these arguments are incorporated herein by reference.

Claim 17 further requires “wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and animations.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 17 and reversal of the Examiner’s rejections.

Claim 18

Claim 18 depends from claim 15, so the arguments above with respect to claim 15 apply here, and these arguments are incorporated herein by reference.

Claim 18 further requires that step of automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons comprises “responsive to selection of the markup language source portion for display, automatically replacing a tag associated with each detected graphical element with a link to one of the placeholders.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claim.

Applicants respectfully request allowance of claim 18 and reversal of the Examiner’s rejections.

Claim 19

Claim 19 depends from claim 18, so the arguments above with respect to claims 15 and 18 apply here, and these arguments are incorporated herein by reference.

Claim 19 further requires that the step of reusing the plurality of placeholders to replace

detected graphical elements within other portions of the markup language source when such other portions are selected for display comprises “responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replacing a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 19 and reversal of the Examiner’s rejections.

Claim 20

Claim 20 depends from claim 18, so the arguments above with respect to claims 15 and 18 apply here, and these arguments are incorporated herein by reference.

Claim 20 further requires “passing altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and display.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 20 and reversal of the Examiner’s rejections.

Claim 21

Claim 21 depends from claim 20, so the arguments above with respect to claims 15, 18 and

20 apply here, and these arguments are incorporated herein by reference.

Claim 21 further requires “responsive to actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source, initiating display of the graphical element replaced by the corresponding placeholder.”

Applicants respectfully traverse the Examiner’s contention that Bickmore-Patil disclose such elements. Nothing in Bickmore or Patil, or any combination of them, appear to teach the elements as described with relation to all other elements of this and the parent claims.

Applicants respectfully request allowance of claim 21 and reversal of the Examiner’s rejections.

Therefore, all claims should be allowed over the combination of Bickmore and Patil, and the Examiner’s obviousness rejections should be reversed.

Grouping of Claims

The claims on appeal do not stand or fall together, as may be seen from the arguments set forth above. Each claim has been argued separately under a separate subheading, and each claim should be considered separately. While the applicant recognizes that a formal statement regarding the grouping of claims is no longer required, each claim should be considered separately; or at the very least each claim which is argued separately in the preceding sections of this brief should be considered separately. Argument: The fact that the claims use different formulations (as detailed above) and/or have been argued separately, shows that, if their patentability is not considered separately, any adverse decision would show that the limitations of some claims had been unfairly ignored.

REQUESTED RELIEF

The Board is respectfully requested to reverse the outstanding rejections and return this application to the Examiner for allowance.

Respectfully submitted,

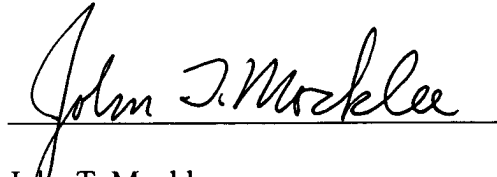
DOCKET NO. 2001.10.241.WT0
Client No. (SAMS01-00175)

PATENT

DAVIS MUNCK, P.C.

Date:

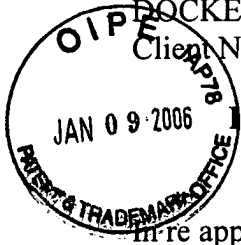
5 Jan. 2006

A handwritten signature in cursive script, reading "John T. Mockler", written over a horizontal line.

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DOCKET NO. 2001.10.241.WT0
Client No. (SAMS01-00175)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Bryan Jeffery Moles
U.S. Serial No.: 10/034,394
Filed: December 27, 2001
For: ALTERNATE INTERPRETATION OF MARKUP LANGUAGE DOCUMENTS
Group No.: 2174
Examiner: Ryan F. Pitaro

APPENDIX A -
Claims Appendix

1. (Previously Presented) For use in a browser, a converter for automatically adapting markup language documents for display in small areas comprising:

a conversion controller for scanning a portion of markup language source selected for display for tags associated with graphical elements and automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons,

wherein the plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display.

2. (Original) The converter according to claim 1, wherein each button is a physical switch or display element functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder.

3. (Original) The converter according to claim 1, wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and animations.

4. (Previously Presented) The converter according to claim 1, wherein the conversion controller, responsive to selection of the markup language source portion for display, automatically replaces a tag associated with each detected graphical element with a link to one of the placeholders.

5. (Previously Presented) The converter according to claim 4, wherein the conversion controller, responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replaces a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements.

6. (Original) The converter according to claim 4, wherein the conversion controller

passes altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and display.

7. (Original) The converter according to claim 6, wherein actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source initiates display of the graphical element replaced by the corresponding placeholder.

8. (Previously Presented) A communications device comprising:
a display;
an input for receiving a markup language document to be displayed on the display; and
a conversion controller scanning a selected display portion of source for the markup language document for tags associated with graphical elements and automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons,
wherein the plurality of placeholders are reused to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display.

9. (Original) The communications device according to claim 8, wherein each button is a physical switch or display element functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder.

10. (Original) The communications device according to claim 8, wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and animations.

11. (Previously Presented) The communications device according to claim 8, wherein the conversion controller, responsive to selection of the markup language source portion for display, automatically replaces a tag associated with each detected graphical element with a link to one of the placeholders.

12. (Previously Presented) The communications device according to claim 11, wherein the conversion controller, responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replaces a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements.

13. (Original) The communications device according to claim 11, wherein the conversion controller passes altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and display.

14. (Original) The communications device according to claim 13, wherein actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source initiates display of the graphical element replaced by the corresponding placeholder.

15. (Previously Presented) A method of adapting markup language documents for display in small areas comprising:

scanning a portion of markup language source selected for display for tags associated with graphical elements;

automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons; and

reusing the plurality of placeholders to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display.

16. (Original) The method according to claim 15, wherein each button is a physical switch or display element functioning as a user control for initiating display of a graphical element replaced by a corresponding placeholder.

17. (Original) The method according to claim 15, wherein the graphical elements replaced by one of the placeholders includes images, user controls, hyperlinks, tables, and

animations.

18. (Previously Presented) The method according to claim 15, wherein the step of automatically replacing each detected graphical element within the selected markup language source portion with one of a plurality of placeholders having labels corresponding to a set of buttons further comprises:

responsive to selection of the markup language source portion for display, automatically replacing a tag associated with each detected graphical element with a link to one of the placeholders.

19. (Previously Presented) The method according to claim 18, wherein the step of reusing the plurality of placeholders to replace detected graphical elements within other portions of the markup language source when such other portions are selected for display further comprises:

responsive to selection of a different portion of the markup language source for display including a different set of graphical elements than the previously selected markup language portion, automatically replacing a tag associated with each detected graphical element within the different markup language source portion with a link to one of the placeholders, thereby reusing placeholders for the different set of graphical elements.

20. (Original) The method according to claim 18, further comprising:

passing altered markup language source containing at least one link to one of the placeholders in place of a graphical element within the selected markup language source portion to a markup language interpreter for rendering and display.

21. (Original) The converter according to claim 20, further comprising:

responsive to actuation of a button corresponding to a placeholder within a displayed portion of the altered markup language source, initiating display of the graphical element replaced by the corresponding placeholder.

DOCKET NO. 2001.10.241.WT0
Client No. (SAMS01-00175)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Bryan Jeffery Moles
U.S. Serial No.: 10/034,394
Filed: December 27, 2001
For: ALTERNATE INTERPRETATION OF MARKUP LANGUAGE
 DOCUMENTS
Group No.: 2174
Examiner: Ryan F. Pitaro

APPENDIX B -
Copy of Formal Drawings

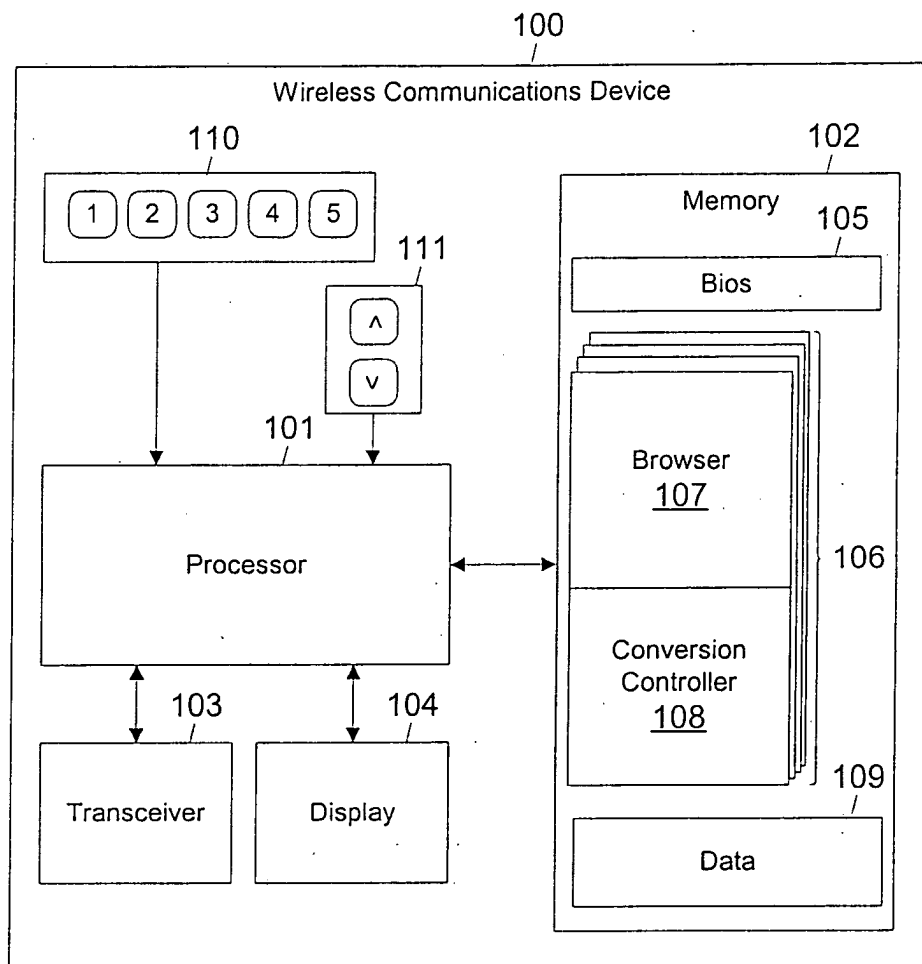


Figure 1



SAMS01-00175

2/3

200

201

IMG1
202a

IMG2
202b

Name 203

Gender ☐ Male ☐ Female } 204 205

Income 206

Figure 2A

207a

<1>

<2>

207b

Figure 2B

IMG1
202a

Figure 2C

<1>

207c

Figure 2D

1 2 3 4 5

<1>

<2>

Figure 2E

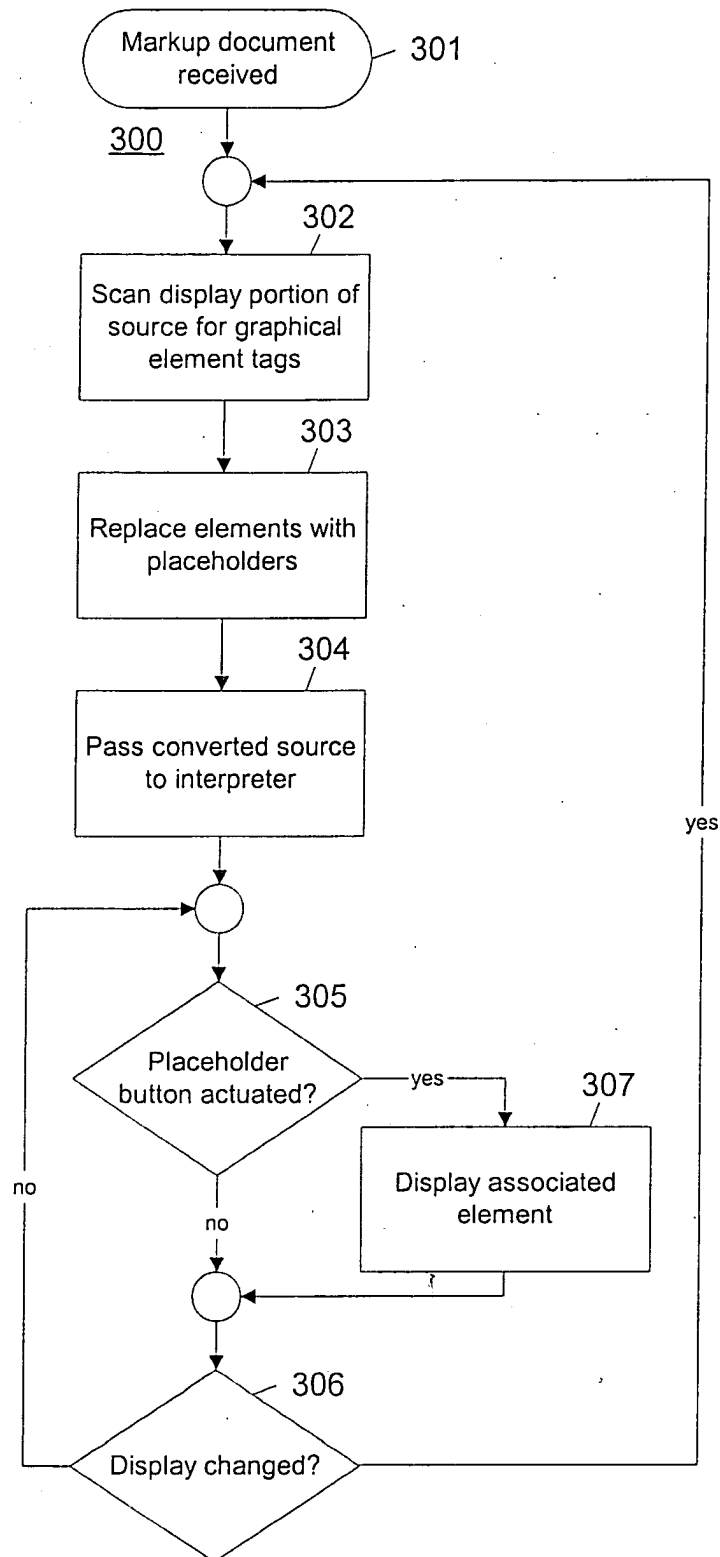


Figure 3



BUCKET NO. 2001.10.241.WT0
Client No. (SAMS01-00175)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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DOCUMENTS
Group No.: 2174
Examiner: Ryan F. Pitaro

APPENDIX C -

Copy of Patent Application No.: 10/034,394 As Originally Filed

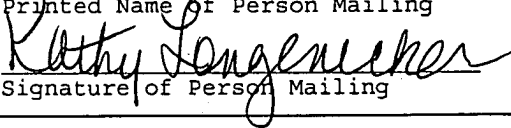
ALTERNATE INTERPRETATION OF MARKUP LANGUAGE DOCUMENTS

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CERTIFICATE OF EXPRESS MAIL	
I hereby certify that this correspondence, including the attachments listed, is being deposited in an envelope addressed to the Assistant Commissioner of Patents, Washington, DC 20231 as "Express Mail, Post Office to Addressee" on the date indicated below.	
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Signature of Person Mailing	Date

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ALTERNATE INTERPRETATION OF MARKUP LANGUAGE DOCUMENTS**CROSS-REFERENCE TO RELATED APPLICATIONS**

5 This application claims priority to U.S. Provisional
Patent Application No. 60/312,475 filed August 15, 2001,
the content of which is hereby incorporated by reference.

TECHNICAL FIELD OF THE INVENTION

10 The present invention is directed, in general, to data
display on wireless communications devices and, more
specifically, to transformation of markup language
documents for display on wireless communications devices.

BACKGROUND OF THE INVENTION

15 Wireless communications devices such as mobile
telephones and personal digital assistants are increasingly
20 being employed to access Internet World Wide Web sites and
enterprise intranet servers employing the HyperText
Transfer Protocol (HTTP). The data retrieved from such
sites or servers to the wireless communications device is

typically a markup language document, such as a HyperText Markup Language (HTML) or Extensible Markup Language (XML) document.

Markup language documents from Internet-type servers
5 are generally created and formatted for display on systems having relatively large display areas, such as personal computers or workstations. Wireless communications devices, on the other hand, usually have constrained (small) display areas incapable of displaying markup
10 language documents in the form in which intended to be displayed. Accordingly, wireless devices generally cannot display markup language documents by interpreting the markup language source code in a "standard" way--that is, the way in which the document designer intended the
15 document to be displayed. Graphic images, tables and user input forms, in particular, are problematic to display on a wireless communications device. Additionally, the document display is slightly altered depending on the configuration of the browser employed by the devices. However, such
20 configurations do not take into account the devices inherent resource limitations, especially with regard to impact on rendering complexity and screen layout.

One solution involves separate documents for wireless communications devices containing similar content to markup language documents intended for display on systems having a larger display area. However, creation and maintenance of duplicate documents consumes time, memory and other resources. Moreover, few sites other than those targeting wireless communications devices bother to create such separate documents.

There is, therefore, a need in the art for adapting markup language documents for display on wireless communications devices or other devices having a constrained display area.

SUMMARY OF THE INVENTION

To address the above-discussed deficiencies of the prior art, it is a primary object of the present invention to provide, for use in a browser, a markup language conversion controller scanning a portion of markup language source selected for display for tags associated with graphical elements. Each detected graphical element with the selected markup language source portion is replaced with one of a set of placeholders each having a label corresponding to one button, where actuation of a button initiates display of a graphical element replaced by the corresponding placeholder. The placeholders are reused to replace other graphical elements within other portions of the markup language source when such other portions are selected for display.

The foregoing has outlined rather broadly the features and technical advantages of the present invention so that those skilled in the art may better understand the detailed description of the invention that follows. Additional features and advantages of the invention will be described hereinafter that form the subject of the claims of the invention. Those skilled in the art will appreciate that

they may readily use the conception and the specific embodiment disclosed as a basis for modifying or designing other structures for carrying out the same purposes of the present invention. Those skilled in the art will also
5 realize that such equivalent constructions do not depart from the spirit and scope of the invention in its broadest form.

Before undertaking the DETAILED DESCRIPTION OF THE INVENTION below, it may be advantageous to set forth
10 definitions of certain words or phrases used throughout this patent document: the terms "include" and "comprise," as well as derivatives thereof, mean inclusion without limitation; the term "or" is inclusive, meaning and/or; the phrases "associated with" and "associated therewith," as
15 well as derivatives thereof, may mean to include, be included within, interconnect with, contain, be contained within, connect to or with, couple to or with, be communicable with, cooperate with, interleave, juxtapose, be proximate to, be bound to or with, have, have a property
20 of, or the like; and the term "controller" means any device, system or part thereof that controls at least one operation, whether such a device is implemented in hardware, firmware, software or some combination of at

least two of the same. It should be noted that the functionality associated with any particular controller may be centralized or distributed, whether locally or remotely. Definitions for certain words and phrases are provided throughout this patent document, and those of ordinary skill in the art will understand that such definitions apply in many, if not most, instances to prior as well as future uses of such defined words and phrases.

5

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, wherein like numbers designate like objects, and in which:

FIGURE 1 depicts a block diagram of a wireless communications device adapting markup languages for display thereon according to one embodiment of the present invention;

FIGURES 2A and 2B through 2E are comparative illustrations of a markup language document display as intended and as adapted by conversion controller according to one embodiment of the present invention; and

FIGURE 3 is a high level flowchart for a process of converting a markup language document for display on a constrained display area according to one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIGURES 1 through 3, discussed below, and the various embodiments used to describe the principles of the present invention in this patent document are by way of illustration only and should not be construed in any way to limit the scope of the invention. Those skilled in the art will understand that the principles of the present invention may be implemented in any suitably arranged device.

FIGURE 1 depicts a block diagram of a wireless communications device adapting markup languages for display thereon according to one embodiment of the present invention. Wireless communications device 100, which may be either a mobile telephone or a wireless personal digital assistant (PDA) in the exemplary embodiment, includes a processor or controller 101 communicably coupled to a memory 102, a wireless transceiver 103 and a display 104. In addition to a basic input/output system (BIOS) 105, memory 102 contains, within application level programs 106, a browser 107 including, either integrated therein or associated therewith, a markup language conversion controller 108. Memory 102 also includes a data area 109

within which retrieved, and optionally translated, markup language documents are stored. Wireless communications device also includes a plurality of numbered or lettered user input buttons 110 and optionally scrolling control buttons 111.

In operation, wireless communications device 100 retrieves markup language documents from external or peripheral sources (not shown) such as servers or nonvolatile storage utilizing browser 107 in accordance with the known art. Either during retrieval and (temporary) storage of the markup language documents to data storage 109 or during rendering of retrieved markup language documents for display, conversion controller 108 adapts the markup language document for display on the wireless communications device 100 in the manner described in further detail below.

Those skilled in the art will recognize that the complete construction and operation of a wireless communications device is not depicted or described herein. Instead, for simplicity and clarity, only so much of the construction and operation of a wireless communications device as is unique to the present invention or necessary for an understanding of the present invention is shown and

described. The remainder of the construction and operation of the wireless communications device may follow conventional practices. Moreover, although a wireless communications device is employed in the exemplary embodiment, those skilled in the art will recognize that the functionality described herein may be readily employed within other types of devices having constrained displays such as, for example, a digital audio (i.e., Motion Pictures Expert Group layer 3 or "MP3") player and docking cradle.

FIGURES 2A and 2B through 2E, which are intended to be taken in conjunction with FIGURE 1, are comparative illustrations of a markup language document display as intended and as adapted by conversion controller according to one embodiment of the present invention. FIGURE 2A is a mockup display of a markup language document as the document is intended to be displayed by the designer. The markup language document, interpreted and displayed in the standard manner, includes a text portion 201 with embedded graphic images 202a-202b, a form text input 203, radio buttons 204, a drop down box 205, and a user control 206 for submitting a query.

The present invention provides an alternate means of interpreting documents written in one of the various markup languages such that the document is better suited for display on the available physical display. In converting markup language documents for display on wireless communications device 100, conversion controller 108 searches the markup language source code for predefined tags and collapses the document by replacing content associated with the predefined tags with a placeholder having a number, letter, icon or other symbol corresponding to the number, letter, icon or other symbol on a user input button 110.

FIGURE 2B illustrates a first portion of the same markup language document displayed in FIGURE 2A after conversion for display on wireless communications device 100. As much of the text portion 201 of the document as can be fit within the display area is rendered on the display, but the graphic images 202a-202b (identified by conversion controller 108 from the image tags within the markup language source code) are replaced by placeholders 207a-207b displaying an identifier (number, letter, icon or other symbol) corresponding to the identifier on one of the user input buttons 110.

When the user presses the input key corresponding to a placeholder 207a, the text display is temporarily replaced by the graphic 202a associated with the image tag corresponding to placeholder 207a as shown in FIGURE 2C.

5 Actuation of one or more other user input keys (such as scrolling keys 111) while the graphic image is displayed causes the display to return to the document text being viewed immediately prior to the placeholder key being actuated (i.e., the display in FIGURE 2B).

10 As the user scrolls through the content of a markup language document, the placeholders are reused. Thus, when the user scrolls down from the display in FIGURE 2B such that placeholder 207a moves outside of the viewable area, the placeholders are all reassigned and the placeholder
15 207c previously associated with image 202a becomes associated with image 202b as shown in FIGURE 2D.

Placeholders are employed for various types of graphics within converted markup language documents, including static bitmaps or compressed images and user
20 controls such as "clickable" buttons 206, radio buttons 204, input form fields 203, and drop down list boxes 205, as well as tables, hyperlinks and animations. Each of these elements may be identified by the respective tags

within the markup language document. Different actions may be employed for different categories of elements when the placeholder is actuated. For instance, no pop-up window is needed for clickable buttons, but pop-up windows are useful for displaying radio buttons for selection by the user.

It should be noted that the buttons corresponding to the placeholders need not be physical switches on the device. With touch screen devices, for example, the browser may instead generate software user interface buttons having a position, size and appearance best accommodating the size and capabilities of the device on which the document is displayed, such as the buttons appearing along one side of the display or within a scrollable "button box" as shown in FIGURE 2E. However, a typical document would require not more placeholders than the available keys on a mobile telephone.

FIGURE 3 is a high level flowchart for a process of converting a markup language document for display on a constrained display area according to one embodiment of the present invention. The process 300 begins with a markup language document being received from a remote source or retrieved from storage (step 301). The markup language document is first passed to the conversion controller,

which scans a portion of the markup language source code sufficient to fill the display for tags relating to predefined elements including inline graphics, tables, and user controls (step 302), and replaces such elements with
5 hyperlink constructs that, when rendered on the display, present placeholders each with a preselected label to the viewer (step 303). If necessary, the conversion controller may generate additional display elements such buttons to accommodate the same document functionality.

10 The modified markup language source code for the portion of the document to be displayed is then sent to a standard markup language interpreter for parsing and rendering (step 304) and the associated portion of the markup language document is displayed.

15 The process then monitors for actuation of a placeholder button by the user (step 305) or scrolling or other display change (such as actuating a "back" control) by the user (step 306). If the user actuates a placeholder button, the corresponding element replaced by the
20 placeholder is displayed (step 307). If the user scrolls the display or otherwise initiates a change in the display content, the appropriate portion of the markup language source code, which may be sequential with or overlapping

the portion previously displayed, is scanned for the predefined elements requiring replacement by placeholders (step 302). The process continues until interrupted by closing the browser or selection of a different markup language document.

The present invention collapses viewable markup language documents by squeezing out white space and replacing document features with placeholders corresponding to keys, ignoring much of the formatting or layout information in existing markup language documents. Space on the small display of a handheld wireless device is saved by allowing a user to pop-up graphics on demand through buttons corresponding to where graphics are originally inline with the text of the markup language document. No special requirements are placed on existing markup languages, and no Web page source code changes are required as with many wireless technologies, nor are Web content processing gateways required as with the Wireless Application Protocol (WAP). All device-specific processing occurs on the device itself, which knows its own inherent capabilities. The complexity required to render graphics in arbitrary positions relative to text is removed, and

easy navigation of typical web pages on a small display area using only a limited set of keys is enabled.

While described in the exemplary embodiment in connection to a wireless communications device, the technique of the present invention may be employed in connection with any browser such as personal computer web browsers. Additionally, while the exemplary embodiment describes dynamic replacement of graphic elements within display area sized portions of the underlying document as the user scrolls or navigates the document, replacement of graphical elements within markup language documents may be static, with the entire original document processed in advance of being sent to a standard markup language interpreter for parsing and display.

It is important to note that while the present invention has been described in the context of a fully functional device or system, those skilled in the art will appreciate that the mechanism of the present invention is capable of being implemented and distributed in the form of a computer usable medium of instructions in a variety of forms, and that the present invention applies equally regardless of the particular type of signal bearing medium is used to carry out the distribution. Examples of

suitable computer usable mediums include: nonvolatile, hard-coded or programmable type mediums such as read only memories (ROMs) or erasable, electrically programmable read only memories (EEPROMs), recordable type mediums such as
5 floppy disks, hard disk drives, and read/write (R/W) compact disc read only memories (CD-ROMs) or digital versatile discs (DVDs), and transmission type mediums such as digital and analog communications links.

Although the present invention has been described in
10 detail, those skilled in the art will understand that various changes, substitutions, variations, enhancements, nuances, gradations, lesser forms, alterations, revisions, improvements and knock-offs of the invention disclosed herein may be made without departing from the spirit and
15 scope of the invention in its broadest form.

WHAT IS CLAIMED IS:

1 1. For use in a browser, a converter for adapting
2 markup language documents for display in small areas
3 comprising:

4 a conversion controller scanning a portion of
5 markup language source selected for display for tags
6 associated with graphical elements and replacing each
7 detected graphical element within the selected markup
8 language source portion with one of a plurality of
9 placeholders having labels corresponding to a set of
10 buttons,

11 wherein the plurality of placeholders are reused
12 to replace detected graphical elements within other
13 portions of the markup language source when such other
14 portions are selected for display.

1 2. The converter according to claim 1, wherein each
2 button is a physical switch or display element functioning
3 as a user control for initiating display of a graphical
4 element replaced by a corresponding placeholder.

1 3. The converter according to claim 1, wherein the
2 graphical elements replaced by one of the placeholders
3 includes images, user controls, hyperlinks, tables, and
4 animations.

1 4. The converter according to claim 1, wherein the
2 conversion controller, responsive to selection of the
3 markup language source portion for display, replaces a tag
4 associated with each detected graphical element with a link
5 to one of the placeholders.

1 5. The converter according to claim 4, wherein the
2 conversion controller, responsive to selection of a
3 different portion of the markup language source for display
4 including a different set of graphical elements than the
5 previously selected markup language portion, replaces a tag
6 associated with each detected graphical element within the
7 different markup language source portion with a link to one
8 of the placeholders, thereby reusing placeholders for the
9 different set of graphical elements.

1 6. The converter according to claim 4, wherein the
2 conversion controller passes altered markup language source
3 containing at least one link to one of the placeholders in
4 place of a graphical element within the selected markup
5 language source portion to a markup language interpreter
6 for rendering and display.

1 7. The converter according to claim 6, wherein
2 actuation of a button corresponding to a placeholder within
3 a displayed portion of the altered markup language source
4 initiates display of the graphical element replaced by the
5 corresponding placeholder.

1 8. A communications device comprising:
2 a display;
3 an input for receiving a markup language document
4 to be displayed on the display; and
5 a conversion controller scanning a selected
6 display portion of source for the markup language document
7 for tags associated with graphical elements and replacing
8 each detected graphical element within the selected markup
9 language source portion with one of a plurality of
10 placeholders having labels corresponding to a set of
11 buttons,
12 wherein the plurality of placeholders are reused
13 to replace detected graphical elements within other
14 portions of the markup language source when such other
15 portions are selected for display.

1 9. The communications device according to claim 8,
2 wherein each button is a physical switch or display element
3 functioning as a user control for initiating display of a
4 graphical element replaced by a corresponding placeholder.

1 10. The communications device according to claim 8,
2 wherein the graphical elements replaced by one of the
3 placeholders includes images, user controls, hyperlinks,
4 tables, and animations.

1 11. The communications device according to claim 8,
2 wherein the conversion controller, responsive to selection
3 of the markup language source portion for display, replaces
4 a tag associated with each detected graphical element with
5 a link to one of the placeholders.

1 12. The communications device according to claim 11,
2 wherein the conversion controller, responsive to selection
3 of a different portion of the markup language source for
4 display including a different set of graphical elements
5 than the previously selected markup language portion,
6 replaces a tag associated with each detected graphical
7 element within the different markup language source portion
8 with a link to one of the placeholders, thereby reusing
9 placeholders for the different set of graphical elements.

1 13. The communications device according to claim 11,
2 wherein the conversion controller passes altered markup
3 language source containing at least one link to one of the
4 placeholders in place of a graphical element within the
5 selected markup language source portion to a markup
6 language interpreter for rendering and display.

1 14. The communications device according to claim 13,
2 wherein actuation of a button corresponding to a
3 placeholder within a displayed portion of the altered
4 markup language source initiates display of the graphical
5 element replaced by the corresponding placeholder.

1 15. A method of adapting markup language documents
2 for display in small areas comprising:

3 scanning a portion of markup language source
4 selected for display for tags associated with graphical
5 elements;

6 replacing each detected graphical element within
7 the selected markup language source portion with one of a
8 plurality of placeholders having labels corresponding to a
9 set of buttons; and

10 reusing the plurality of placeholders to replace
11 detected graphical elements within other portions of the
12 markup language source when such other portions are
13 selected for display.

1 16. The method according to claim 15, wherein each
2 button is a physical switch or display element functioning
3 as a user control for initiating display of a graphical
4 element replaced by a corresponding placeholder.

1 17. The method according to claim 15, wherein the
2 graphical elements replaced by one of the placeholders
3 includes images, user controls, hyperlinks, tables, and
4 animations.

1 18. The method according to claim 15, wherein the
2 step of replacing each detected graphical element within
3 the selected markup language source portion with one of a
4 plurality of placeholders having labels corresponding to a
5 set of buttons further comprises:

6 responsive to selection of the markup language
7 source portion for display, replaces a tag associated with
8 each detected graphical element with a link to one of the
9 placeholders.

1 19. The method according to claim 18, wherein the
2 step of reusing the plurality of placeholders to replace
3 detected graphical elements within other portions of the
4 markup language source when such other portions are
5 selected for display further comprises:

6 responsive to selection of a different portion of
7 the markup language source for display including a
8 different set of graphical elements than the previously
9 selected markup language portion, replaces a tag associated
10 with each detected graphical element within the different
11 markup language source portion with a link to one of the
12 placeholders, thereby reusing placeholders for the
13 different set of graphical elements.

1 20. The method according to claim 18, further
2 comprising:

3 passing altered markup language source containing
4 at least one link to one of the placeholders in place of a
5 graphical element within the selected markup language
6 source portion to a markup language interpreter for
7 rendering and display.

1 21. The converter according to claim 20, further
2 comprising:

3 responsive to actuation of a button corresponding
4 to a placeholder within a displayed portion of the altered
5 markup language source, initiating display of the graphical
6 element replaced by the corresponding placeholder.

ALTERNATE INTERPRETATION OF MARKUP LANGUAGE DOCUMENTS

ABSTRACT OF THE DISCLOSURE

5 A portion of markup language source selected for
display is scanned for tags associated with graphical
elements. Each detected graphical element with the
selected markup language source portion is replaced with
one of a set of placeholders each having a label
10 corresponding to one button, where actuation of a button
initiates display of a graphical element replaced by the
corresponding placeholder. The placeholders are reused to
replace other graphical elements within other portions of
the markup language source when such other portions are
15 selected for display.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Bryan Jeffery Moles
U.S. Serial No.: 10/034,394
Filed: December 27, 2001
For: ALTERNATE INTERPRETATION OF MARKUP LANGUAGE
DOCUMENTS
Group No.: 2174
Examiner: Ryan F. Pitaro

APPENDIX D -
Evidence Appendix

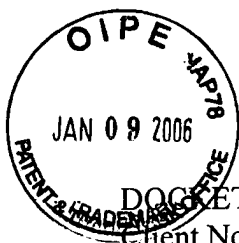
Not Applicable – No evidence outside the prosecution history is relied upon.

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APPENDIX E -
Related Proceedings Appendix

Not Applicable – To the best knowledge and belief of the undersigned attorney, there are none.



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